

SYMPTOMATOLOGY, PROPHYLAXIS, TREATMENT, AND PUBLIC AWARENESS IN THE FIELD OF THE CHRONIC VENOUS DISEASES IN THE FEMALE POPULATION OF POLAND: AN EPIDEMIOLOGICAL STUDY OF A REPRESENTATIVE GROUP OF THE ADULT POPULATION

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ABSTRACT

Chronic venous disease (CVD) is one of the most commonly present and diagnosed vascular system pathologies, and it influences the health status of the general population and the quality of life of many individuals. Among the significant factors that influence the presence and severity of CVD is patient gender, and some known and suspected risk factors have to be considered. In this study, the prevalence of symptoms and signs of CVD in the female population of Poland was evaluated. Additionally, the levels of knowledge and public awareness related to CVD and its risk factors, prophylaxis methods, and treatments were evaluated. The study was performed with a representative group of 604 adult females (aged 20–80 years) from all Polish provinces via computer-assisted telephone interviews. The study was commissioned by the Polish Society of Phlebology and supported by a scientific research grant from the HASCOLEK company.

Key words: chronic venous disease, epidemiology, symptomatology.

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INTRODUCTION

Chronic venous diseases (CVDs) are among the most commonly present vascular pathologies. Chronic venous disease treatment and the treatment of the complications of CVD generate significant costs in the health care system in addition to general social costs [1–4]. Despite the significant worsening of the patients' quality of life, many patients are seen by physicians only in the very late phase of disease advancement. According to a study performed by Jawień *et al.*, venous crural ulcers occur in 1.5% of the adult population in Poland, including 0.5% of patients with active venous ulcers [5]. In the same study, which concerned adult patients who visited their general practitioners (GPs) (independent of the reason for the GP consultation), the symptoms and signs of CVD were found in 48% of the female population and in 37% of the males [5]. Currently, there is still a lack of the good projected and properly performed epidemiological studies dedicated to chronic venous disease that are related to the general unselected population in our country [5–9]. Moreover, the data concerning the potential and clinically implemented treatment methods in Poland need to

validated [6–9]. Due to the lack of reimbursements for compression, sclerotherapy, new minimal invasive ablation methods, and pharmacotherapy for CVD (only open classical surgical interventions are covered by the state national insurance), there is potentially no reliable access to the preferred treatment methods in centres that treat phlebological patients in our country (many of the procedures are performed in private phlebological centres that are not associated with the national insurance system). We are also not able to answer the following questions: How large is the population of patients with CVD who are properly treated? And what is the level of patient knowledge concerning CVD prophylaxis and treatment possibilities? In this regard, all studies and research that focus on the epidemiological situation of CVD and its treatment modalities in our country seem to be clinically justified. The aim of the current study was to assess the prevalence of the symptoms and signs of chronic venous diseases in the population of the adult females in Poland. Additionally, the levels of knowledge and public awareness about CVD in the representative group of the female population were also evaluated.

MATERIAL AND METHODS

The study was performed from 31 March 2014 until 11 April 2014 on a group of 604 adult females aged from 20 to 80 years from all provinces of Poland. The research was conducted based on results from computer-assisted telephone interviews that were performed with the help of an agency that specialises in public opinion investigations (IMAS International Sp. z o.o.). The interviews targeted a representative group of the female population of Poland. During the telephone interviews, a special, previously prepared questionnaire was used. The numbers of stationary telephones and mobile telephones were randomly selected. In the study group of 604 female patients, the following age intervals were defined: 20-30 years – 21%; 31-45 years – 26.8%; 46-60 years – 28.1%; and 61-80 years – 24%. As mentioned before, participants from all provinces of Poland were recruited for this study. The distributions of the study population by age, province of residency, and class of the place of residency reflected the distributions of these variables in the general Polish population aged 20-80 years after weighting the data according to educational level (the age categories, provinces, and sizes of the places of the residency were cross-matched in the quoted plan, and the deviation did not exceed 3%). 38.9% of the studied population lived in rural areas, 24.1% lived in cities with ≤ 50,000 citizens, 16% lived in cities with 51,000-100,000 citizens, 16% lived in cities with > 200,000 inhabitants, and 5% were residents of the capital Warsaw. In the study group, physical work activities were reported by 20.6% of the participants, and intellectual work was reported by 24.6%. Of the population, 24.6% were unemployed or looking for a job, and 35.1% were retired or receiving disability living allowances. Among the respondents, 37% had completed basic primary education, 39.8% had completed secondary school, and 23.1% had obtained higher levels of education. During the study, the following problems and questions were defined and accounted for when creating the study questionnaire:

- an assessment of the prevalence of the signs and symptoms of chronic venous diseases and their complications in the adult female population of Poland,
- an assessment of the prevalences of CVD risk factors in the study population (i.e. factors related to daily habits and activities, work, lack of physical activity, and positive family histories),
- an evaluation of the CVD treatment modalities and proper access to medical care,
- an evaluation of the knowledge and public awareness about CVD risk factors and potential complications of CVD including varicose vein complications,
- an assessment of knowledge sources concerning CVD,
- an evaluation of the patients' satisfaction concerning their levels of knowledge about CVD treatment and prevention measures, and an evaluation of their expectations concerning the availability of this knowledge in the media.

RESULTS

In the study population, subjective complaints that were potentially related to the presence of CVD were reported by most of the respondents. Seventy per cent of the cases reported heaviness and fatigue in the lower legs that worsening after long periods of standing or sitting. This complaint was more frequently present in the older population (62.5% in the 20-30-year group and 74.3% in the 61-80-year-old group; Table 1). Pain in the lower extremities was reported by 37%, and cramps within the lower legs (especially after long periods of standing or sitting) were present in 46% (with a prevalence of 61% prevalence in the age group above 60 years old; Table 1).

Similar to the symptoms, a relatively high proportion of the investigated population reported CVD signs (Table 2). Only 13% the respondents reported no signs or symptoms of CVD.

Based on the study results, the significant progression of the occurrence of CVD symptoms as well as progression of the disease advancement with an increasing age of the respondents should be emphasised. The rate of varicose

Table 1. The prevalence of subjective symptoms related to the lower legs that are potentially related to CVD in the analysed female population

	% of the study group with reported symptoms	20-30 yrs.	31-45 yrs.	46-60 yrs.	61-80 yrs.
Feeling of heaviness and fatigue in the lower limbs after a longer period of standing or sitting	70%	62.5%	68.1%	72.7%	74.3%
Leg pain, worsening after a longer period of standing or sitting	37%	28.4%	31.2%	44.9%	42.5%
Lower leg cramps, worsening after longer sitting or standing	46%	37.1%	36.4%	48.1%	61.1%
Itchy skin of the lower leg in the crural region	12%	5%	7%	11%	18%

Table 2. The presence of the signs of CVD in the evaluated population

	% of the population with signs	20-30 yrs.	31-45 yrs.	46-60 yrs.	61-80 yrs.
Reticular veins, telangiectasias	51%	31.1%	48.6%	56.5%	65.1%
Lower leg swelling	40%	22.4%	42%	41%	51.7%
Varicose veins	32%	11.1%	28.2%	35.4%	50.1%
Discoloration, trophic changes	18%	8.8%	8.3%	23.9%	29.4%
Non-healing or difficult-to-heal lower leg ulcerations	1.4%	1.9%	0.3%	0.3%	3.4%

vein occurrence in the entire study population was 32%, and more than 50% of the patients over the age of 60 years reported both varicose veins and leg swelling. Moreover, these complaints were also present in the younger population; in the 31-45-year-old group, leg swelling was reported by 42% of the respondents, and varicose veins were reported by 28.2%. Additionally, the relatively high prevalence of leg ulcers in the patients above 60 years old (3.4%) should also be emphasised. Clinical signs were often correlated with the presence of clinical symptoms; the coexistences of signs and symptoms are presented in Table 3.

Regarding the data in Table 3, the information concerning the groups of patients with leg ulcers should be interpreted with caution due to the limited number of

cases, particularly in the younger subpopulations. In contrast, in the majority of the groups, the common coexistence of symptoms and signs that are potentially related to chronic venous disease should be emphasised. Among the female patients with varicose veins, 78% reported feelings of heaviness and fatigue in the lower limbs after long periods of standing or sitting.

Regarding the group of patients with signs and symptoms of chronic venous disease, a question about the importance of these signs and symptoms during the patient's daily activities and duties was included in the questionnaire (Fig. 1). The answers were provided as ratings that ranged from 1 to 5 points (1 – “no problem at all” and 5 – “they are a very severe problem for

Table 3. The coexistence of clinical signs and symptoms of chronic venous disease in the examined female population

% of signs and symptoms coexistence – evaluated in the relationship to the symptom or sign in the column title	Varicose veins	Telangiectasias	Leg swelling	Feeling of heaviness and fatigue in the lower limbs after a longer period of standing or sitting	Leg pain, worsening after a longer period of standing or sitting	Lower leg cramps, worsening after longer sitting or standing	Itchy skin of the lower leg in the crural region	Discoloration, trophic changes	Non-healing or difficult-to-heal lower leg ulcerations
Varicose veins		51%	43%	35%	41%	40%	60%	67%	56%
Telangiectasias	68%		51%	44%	46%	46%	68%	77%	58%
Leg swelling	52%	47%		45%	51%	47%	68%	60%	74%
Feeling of heaviness and fatigue in the lower limbs after a longer period of standing or sitting	79%	76%	84%		88%	81%	93%	86%	77%
Pain, worsening after a longer period of standing or sitting	57%	49%	58%	53%		57%	68%	58%	68%
Lower leg cramps, worsening after longer sitting or standing	64%	55%	61%	57%	66%		73%	72%	70%
Itchy skin of the lower leg in the crural region	23%	19%	21%	15%	19%	17%		28%	46%
Discoloration, trophic changes	40%	35%	30%	22%	25%	27%	44%		56%
Non-healing or difficult-to-heal lower leg ulcerations	4%	3%	4%	2%	3%	3%	8%	6%	

me”). Only 28% of the respondents specified that the above-mentioned symptoms and signs of CVD did not create any problems in their daily lives. Among the other patients, various levels of complaint severity were observed (19% of the respondents confirmed that the presence of the disease created very significant/severe problems; Fig. 1).

Among the study group, 45.1% of the respondents were professionally active, including 42.9% of respondents who were required to sit at work, 12.8% who performed their work in the standing position, and 44.3% of respondents who defined their professional work as requiring walking. In the overall examined population, the median time spent sitting during professional work was four hours, and the median time spent in the standing position was six hours. Less than two hours of sitting was reported by 7.1% of the respondents, 2-4 hours was reported by 33.5%, 4-8 hours was reported 37.1%, and more than eight hours of sitting was reported by 21.4%. More than two hours of daily of standing was reported by 9.8% of the participant, 2-4 hours was reported by 19.1%, 4-8 hours was reported by 34.2%, and more than eight hours of standing was reported by 35.6%.

Potential risk factors for CVD development and progression other than professional activities were investigated in this study. Among all respondents, 58.6% reported the presence of varicose veins in their parents, grandparents, or siblings, and 62.6% of the population drank alcohol (1.5% a few times per week, 13.9% a few times per month, and 46.7% once per month or less). The performance of sport activities was reported by 49.9% of the respondents, including 9.8% who performed such activities five times per month, 13.6% who did so 6-12 times per month, and 26% who did so more than 12 times per month. 23.9% of the questioned population were smokers.

Despite the high prevalence of symptomatic patients, the rate of treated or continuously controlled patients remained very low. Among the subpopulation of treated patients with disease symptoms and signs, only 35.3% visited their physician (currently or in the past). Another 22.1% of this population consulted with pharmacy staff

about their complaints and CVD problems. Among the group of respondents who visited their physician, 56.1% received a clear explanation of the aetiology and mechanisms of the disease. In the overall study population, only 33.8% of the patients who ever experienced a physician consultation (independent of the reason for the consultation) were asked about complaints that were potentially related to the lower extremities (including swelling, pain, and the presence of varicose veins). Moreover, 86.8% of the study population emphasised that GPs should focus greater attention on problems related to varicose veins and the potentially related complications.

Regarding the reported data, disease duration was also considered. In 33.2% of the respondents, the duration of the presence of the varicose veins was longer than 20 years, in 23% the duration was more than 10 years, and in 20.3% the duration was between 5 and 10 years. In response to the question “Who among physicians should primarily care for patients with varicose veins?”, most of the patients mentioned vascular surgeons (34%) followed by cardiologists (6.1%), general surgeons (2.5%), internal medicine specialists (2.5%), angiologists (2%), dermatologists (1.3%), and more rarely other specialists. Phlebologists were mentioned only by 0.7% of the questioned population. One important element that is related to prophylaxis and early treatment implementation is the patients’ education. However, as documented in this study, professional medical information concerning varicose veins was primarily obtained not from medical staff but rather from other non-medical sources; only 22.4% of the respondents specified their physician as the source of knowledge source, whereas 32.2% indicated that their knowledge came from TV, radio, or internet adverts and information programmes (Fig. 2). Regarding the level of knowledge concerning chronic vein disease, a large group of patients confirmed a lack or low level of proper education related to disease prophylaxis and management (including self-management, Figs. 3 and 4). The respondents were also questioned about the need for education and publicity concerning CVD in the media (Fig. 5).

The questionnaire prepared for this study included questions concerning current and previous treatment methods (answered by the group of symptomatic patients; Fig. 6). The responses revealed that locally or orally administered drugs, diet supplements, and leg elevation were the primary CVD therapies utilised by the examined female population in Poland. However, due to the study’s methodology, we were unable to determine the proportion of the population that was being treated according to advice from a physician consultation or the proportion of the population that was using self-treatment methods.

DISCUSSION

Chronic venous diseases have a significantly higher prevalence among the female population and are

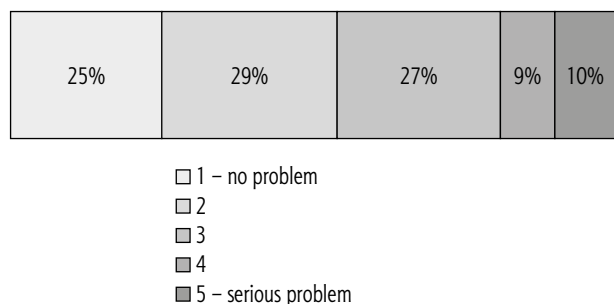


Fig. 1. Results for the question “Do the reported complaints cause significant problems in daily activities and duties?” from the group of symptomatic patients

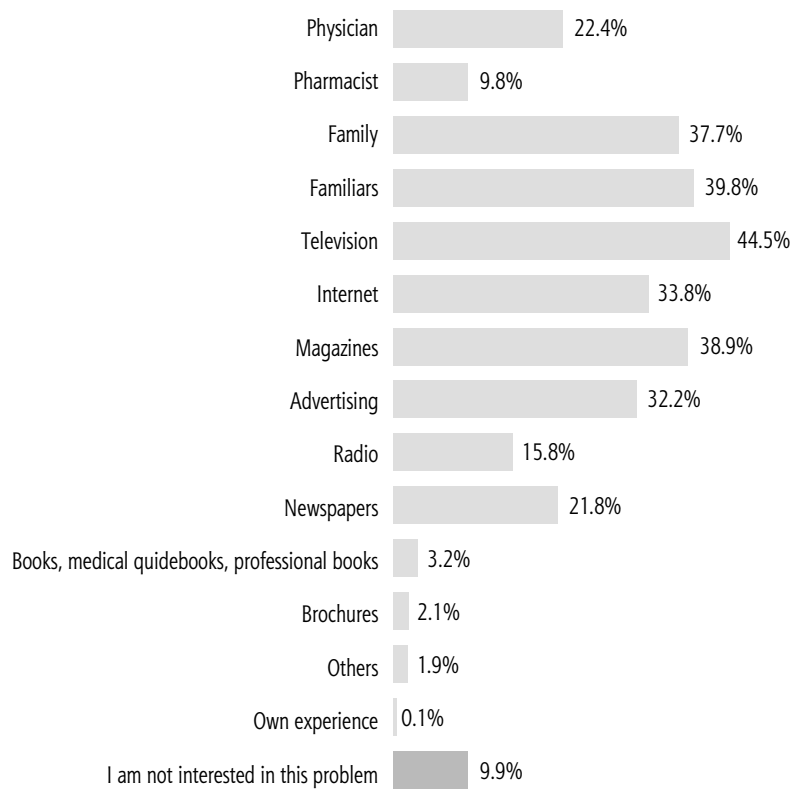


Fig. 2. The sources of knowledge about varicose veins and their complications, prophylaxis, and treatment

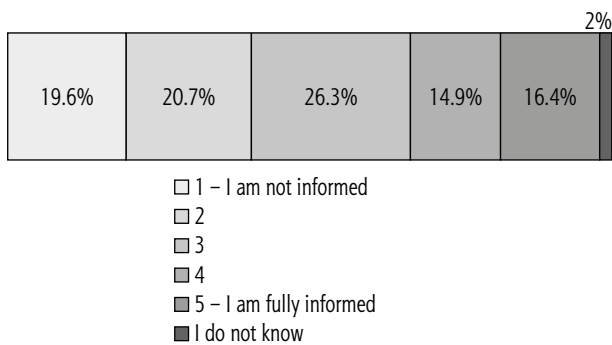


Fig. 3. The results for the question "How do you assess your knowledge, and what should you do if CVD-related complaints occur?"

an important but still underestimated problem for the health of the population [5, 10-15]. According to previous epidemiological studies, the high prevalence of venous diseases in the populations of the Western world correlates with the high prevalence of symptomatic patients. In this context, not only should the presence of varicose veins and trophic changes be considered, but the high prevalence of the symptoms related to CVD that are subjectively reported by patients, such as leg swelling, fatigue, cramps, and itching, should also be accounted for in CVD [9-12]. The presence of the above-mentioned symptoms can significantly influence patients' quality of life as well as work and social activities [9, 15-19]. It should also be empha-

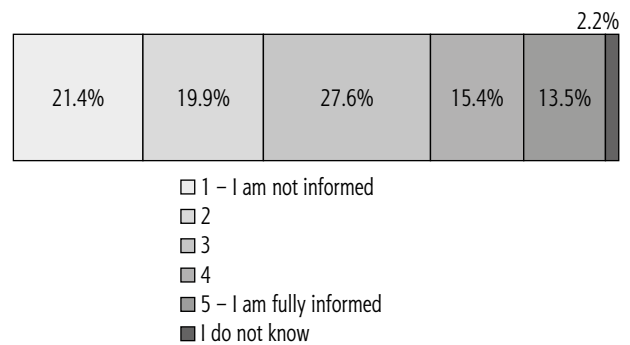


Fig. 4. Results for the question "How do you assess the level of your knowledge concerning prophylaxis for chronic venous disease?"

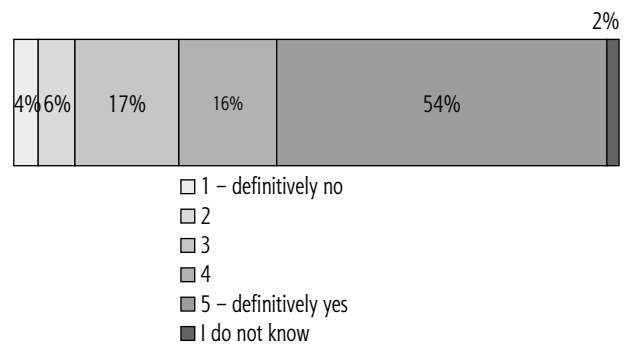


Fig. 5. Results for the question "Do you think that problems associated with chronic venous disease and its prophylaxis and treatment should be given more exposure and promotion in the media?"

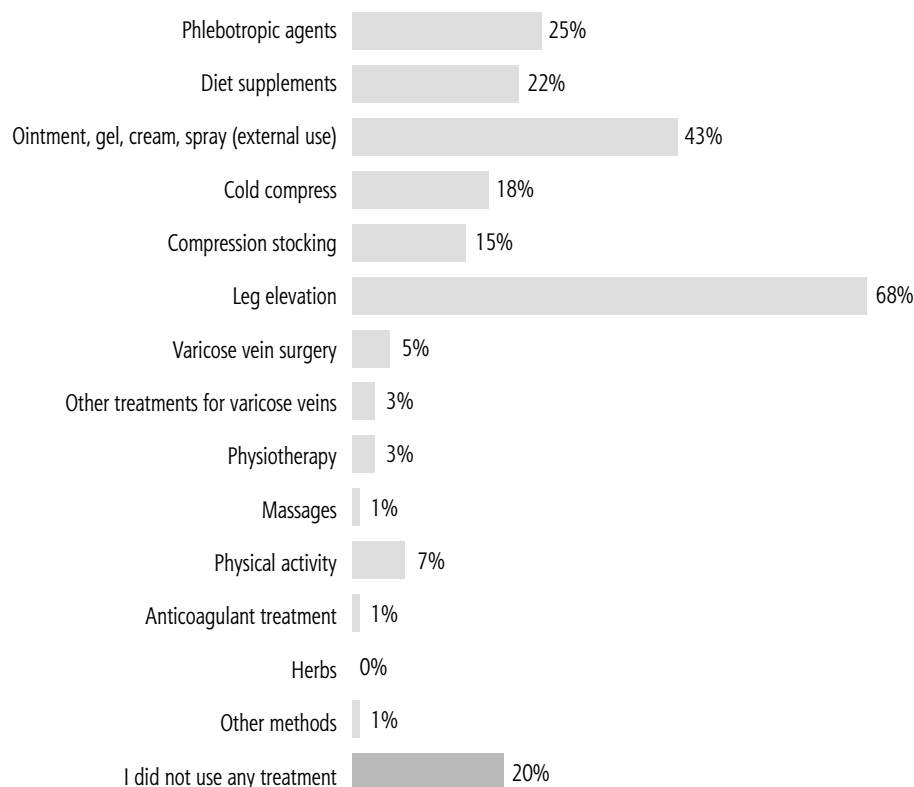


Fig. 6. CVD treatment methods in the symptomatic patient group

sised that these problems and complaints occur in the patients with no visible pathologies, such as varicose veins or swelling, on physical examination. In a study performed in Italy with a group of 1031 patients, varicose veins were found in 22.6% of the patients, and another 15.8% reported subjective complaints without varicose veins, but US-diagnosed saphenous vein reflux was found in the latter group. Additionally, in the same study, 15.9% of the patients suffered from CVD-related complaints without visible varicose veins or reflux documented upon duplex Doppler examination (C0_s) [18]. Regarding patients with greater than C0 class disease advancement, there are increasing numbers of studies that document increases in CVD class in addition to a correlation between advanced patient age and a greater prevalence of CVD symptoms [10, 20, 21].

In light of the above-mentioned information, our study results also confirm the very high prevalence of symptoms and signs that are potentially related to CVD in the female population. Among the 604 respondents, only 13% did not suffer from any lower leg complaints, and 70% of the cases reported feelings of heaviness and fatigue after long periods of standing or sitting (leg pain after long periods of standing or sitting were reported by 37%, and cramps were reported by 46% the of cases). In the study population leg swelling was also relatively common, especially in patients with other signs or symptoms of CVD. In the group of patients

with varicose veins, pain and swelling occurred in more than 50% of the population. According to the patients' answers, the majority of subjects who reported symptoms and signs of CVD also reported that these symptoms and signs constituted significant health problems (only 28% of the symptomatic respondents did not consider the symptoms and signs to problems that influenced their daily activities).

Similar to the high prevalence of symptomatic patients in our study, high prevalences of chronic venous disease in Western world populations have also been reported in other studies. In the Bonn Vein Study, which included a group of 3072 patients aged 18-79 years, CVD-related symptoms (such as feelings of heaviness, fatigue, or pain) were found in 48% of males and 62% of females. In the same study, leg swelling occurred in 13.4% of the study group [17]. In a study performed in Italy (the 24 Cities Cohort Study), a population of 5247 patients was investigated, and 64.8% of the patients had class C1 diagnoses and 43% had C2 diagnoses [22]. The Edinburgh study was a cross-sectional study of 1566 subjects aged 18 to 64 years from the general population of Edinburgh, Scotland, and the telangiectasia and reticular veins were found in approximately 80% of the men and 85% of the women. Moreover, in the same population, varicose veins were present in 40% of the men and 16% of the women, and ankle oedema was diagnosed in 7% of the men and 16% of the women [23]. In the San Diego

Population Study, which was performed in California, the presence of varicose veins in the female population was reported to be 27.7%, trophic changes occurred in 5.3%, and telangiectasia was found in 55.9% [24]. In another study conducted by the American Venous Forum in the USA, a population of 2234 patients (mean age: 60 years) was investigated. Class C0 chronic venous disease was reported in 29%, C1 in 29%, C2 in 23%, C3 in 10%, C4 in 9%, C5 in 1.5%, and C6 in 0.5% of the study population [25]. In Spain, a research project (the Vein Consult Program) included 19,800 patients who consulted with GPs. The reported prevalence of chronic venous disease (CVD, classes C1-C6) was 48.5% in the entire population, and the prevalence was significantly higher in the females (58.5%) than in the males (32.1%) [26]. High prevalences of chronic venous disease have also been reported by other researchers [27-35].

In the present study, we sought reasons for the high prevalence of symptomatic patients, and some of the potentially related factors should be investigated. In this context, patient education and knowledge about CVD prophylaxis tools and treatment possibilities and the possibilities for accessing specialist medical care should be taken into consideration. In our study, among the symptomatic women, only 35.3% decided to visit physicians for lower leg complaints. In contrast, only 33.8% of the patients of the general population who had ever consulted their GPs (independent on the reason for the consultation) had been asked about any complaints related to the lower legs (including potential CVD-related symptoms). The low awareness of CVD among medical staff seems also to have other consequences; based on the patient responses, many of the patients did not receive proper and clear information about CVD pathophysiology, prophylaxis and treatment methods. According to our results, only 22.4% of the respondents received or were receiving knowledge about chronic venous disease from their physicians. More commonly, information was obtained from educational sources, such as TV, radio, and the Internet, or from relatives. Consequently, many of the respondents to our study summarised their knowledge concerning CVD as unsatisfactory and insufficient.

Among the factors that are related to the high rate of symptomatic patients and the unsatisfactory management of this group of patients are the lack of proper treatment and prophylaxis method implementation in daily practice. Of course, these deficiencies can be related to many coexisting factors including access to specialist medical care, self-treatment on the part of patients, and insufficient patient awareness and knowledge. Our study results indicate that pharmacological treatments, including local or systemic drug administration, and the administration of diet supplements are the main therapeutic approaches to CVD-related complaints. Compression treatment in this patient group was very seldom used. More frequent-

ly used self-treatment methods included leg elevation. This information is also important in terms of the chronic nature of the disease and the typically long period required for treatment [12, 13, 20, 23]. In our study, the duration of varicose veins was greater than 20 years and 10-20 years in 33.2% and 23% of the patients, respectively. These findings at least partially explain the still very significant numbers of patients who visit physicians during the very advanced stage of the disease; i.e. the lack of proper prophylaxis and early therapeutic intervention and the lack of proper knowledge and patient education concerning prophylactic tools can result in the progressive disease worsening and the occurrence of complications. Therefore, improvements in access to specialist care should be combined with broader education of the patient population about the symptoms and signs of CVD and prophylactic methods for preventing CVD. Currently, due to a lack of knowledge, many of the commonly occurring symptoms of CVD are ignored by patients. Moreover, in cases involving more severe complications of CVD, such as venous ulcers and superficial or deep vein thromboses, patients are often seen very late by physicians.

Some limitations of our study should be mentioned. The limitations are mostly related to the design of the study (i.e. telephone and computer-supported interviews). The questions prepared and given to the respondents mostly focused on chronic venous disease symptoms and signs. There was no verification of the diagnoses direct physical examinations conducted by a physician. Despite this limitation and despite the potential presence of other disease diagnoses in the study group, the scale of the documented problem assessed in this representative group of Polish females is suggestive of the need for increased awareness of lower leg vascular diseases among medical staff and the patient population of our country.

CONCLUSIONS

Despite progress in medical science, the high prevalence of chronic venous diseases and the low level of public awareness in this field justify activities that lead to widespread knowledge about prophylaxis and treatment possibilities for chronic venous disease. This education should be strongly supported by medical staff awareness in the field of CVD diagnosis and the complications of CVD among general practitioner offices and specialist care centres.

The authors declare no conflict of interest.

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